

CSI Sustainability Practice Group

LEED V4: Built to Perform
Webinar 2/18/15, 3-4PM EST

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Learning Objectives

- 1 Underlying principles guiding v4
- 2 Performance connections- new integrative process & metering prerequisites
- 3 Product transparency & its ramifications on the building products industry
- 4 New concepts in IEQ

LEED v4: Built to Perform

WHY?

- Raising the sustainability bar
- Drive market transformation

How?

- Shift from avoiding negative impact categories to improved environmental outcomes

USGBC's Reach Today:

- 77 chapters
- 13,000 member organizations & companies
- LEED program used in 145 countries
- 181,000 professionals hold LEED credentials
- 64,000 LEED global green building projects that span 10.6 billion square feet

Who Is USGBC/LEED?

- **U.S. Green Building Council (USGBC)**, co-founded by current CEO Rick Fedrizzi, Mike Italiano, and David Gottfried in 1993, is a private 501(c)3, membership-based non-profit organization that promotes sustainability in buildings design, construction and operation. USGBC is best known for its development of the Leadership in Energy and Environmental Design (LEED) green building rating systems.
- LEED has grown from six volunteers on one committee to more than 200 volunteers on nearly 20 committees and nearly 200 professional staff. Many members from industry review and assist in creating LEED standards in the form of Technical Advisory Groups (TAG.)

Materials & Resources TAG

Steve Baer, Chair
Brad Guy, Vice-Chair
Paul Bertram
Paul Bierman-Lytle
Steve Brauneis
Amy Costello
Chris Geiger
Barry Giles
Avi Golen
Lee Gros
Rick Levin
Joep Meijer
Xhavin Sinha
Raymond Smith
Wes Sullens
Denise Van Valkenburg

PE INTERNATIONAL/ Five Winds Strategic Consulting
Material Reuse
Kingspan Insulated Panels, North America
Pangeon/ iMCC Management Consulting
Rocky Mountain Institute
Armstrong World Industries
San Francisco Department of the Environment
BuildingWise
Construction Waste Management
Lee Gros Architect and Artisan
Kahler Slater
The Right Environment
CH2M HILL
U.S. Environmental Protection Agency
StopWaste.Org of Alameda County
Eurofins

LEED v4 Evolution

- 23,000 public comments + 6 drafts over 3 years
- Approved by 86% of consensus body
- Option to use now, not effective until June 2015
- Maintains the same structure but emphasis on accountability & performance
- Move to performance-based criteria rather than “check the box”

LEED Rating Systems: 21

LEED for Building Design and Construction

New Construction and Major Renovation	Schools
Core and Shell Development	Retail
Warehouses and Distribution Centers	Data Centers
Hospitality	Healthcare
Homes and Multifamily Lowrise	Multifamily Midrise

LEED for Interior Design and Construction

Commercial Interiors	Retail
Hospitality	

LEED for Building Operations and Maintenance

Existing Buildings	Retail
Schools	Hospitality
Warehouses and Distribution Centers	Data Centers

LEED for Neighborhood Development

Plan	Built Project
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New LEED Credential Logos

LEED PROFESSIONAL CREDENTIALS

Browse our catalog of LEED Professional Credentials and learn how to apply, register and prepare for a LEED Professional Exam. Be recognized for your knowledge and understanding of green building practices.



**LEED Green
Associate**



**LEED AP Building
Design &
Construction**



**LEED AP Operations
& Maintenance**



**LEED AP Interior
Design &
Construction**



LEED AP Homes



**LEED AP
Neighborhood
Development**



LEED Fellow



**LEED APs without
specialty and
enrollment**

LEED Professional Statistics

Revised March 1, 2011

LEED Green Associate	17,144
LEED AP	33,922
BD+C	29,724
Homes	365
ID+C	2,639
ND	168
O+M	1,470
LEED AP without specialty	111,480
Total	162,546

Revised March 1, 2011

1. Architecture	46,119
2. Construction Management	15,387
3. Mechanical Engineering	9,427
4. Project Managment	8,558
5. Interior Design	7,953

Top 5 Professions

At a Glance

The New Jargon

Introduces new programs, terms and concepts
that may be unfamiliar:

LID

sDA

EPD

CSR

CDPH

BUG

BEC_x

HPD

SAN

GEE

LEED v4 Impact Categories



Reduce contribution to **global climate change**



Enhance individual **human health**



Protect and restore **water resources**



Protect and enhance **biodiversity and ecosystem services**



Promote **sustainable and regenerative** material cycles



Build a **green economy**



Enhance **community quality of life**

Integrative Process

- ‘Integrative’ connotes that it is an on-going process involving all systems of the building and those who use it
- Identify & use opportunities to achieve synergies across disciplines & bldg systems
- Use the above to inform the OPR, BOD, design & construction documents



LOCATION AND TRANSPORTATION

Location & Transportation

- Borrowed from LEED for Neighborhood Development
- Addresses larger-scale land-use issues
- Allows Sustainable Sites (SS) category to focus on issues specific to the project site

LEED for Neighborhood Development Location

- Locate the project within a certified LEED- ND site
- Earn 8-16 points based on certification level
- If the above is attempted, projects not eligible to earn points for other LT credits



SUSTAINABLE SITES

Rainwater Management

(do right by nature)



Rainwater is viewed as a resource, stormwater as a waste to get rid of.

The new credit requires the management of the 95% of local rainfall events throughout the year.

The former ‘stormwater’ management credit placed emphasis on managing the worst storms in a year.

LID (low-impact development) & green infrastructure are the tools referenced in v4; e.g. rain gardens over swales, blue roofs instead of holding ponds.

Light Pollution Reduction



Prescriptive path: new IES's BUG method (backlight, uplight & glare)- match light fixture specifications w/light zone.

Performance path: calculation method similar to LEED 2009 but modeled after IDA's Model Lighting Ordinance (MLO); this path may be doomed by its complexity.



WATER EFFICIENCY

Water Metering Prerequisite

(What gets measured gets managed)

- Provide water meters for building & associated grounds.
- Commit to sharing w/USGBC the whole-project water usage data for a five-year period.
- Connects building occupants & facilities management w/water impacts of their actions & management.

Cooling Tower Water Use



Ultra-efficient evaporative condenser

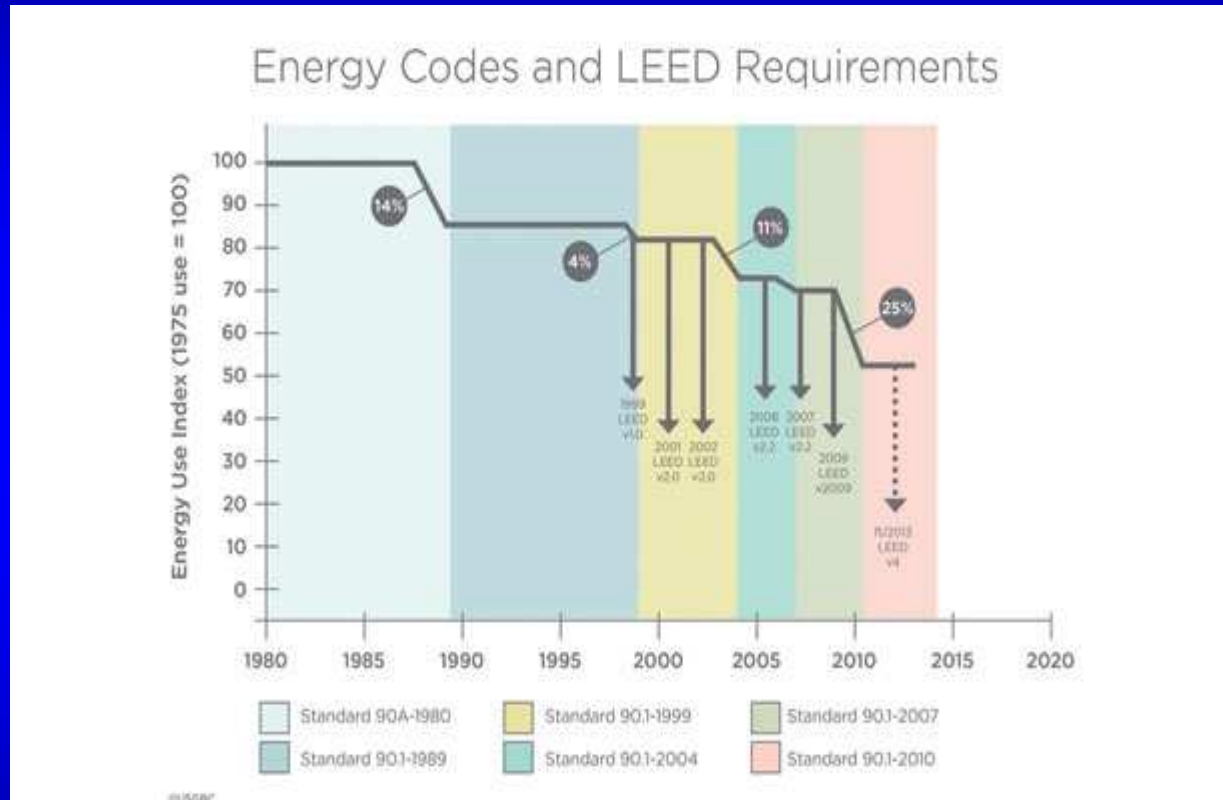
Conserve water used by cooling tower makeup while controlling microbes, corrosion, & scale in the condenser water system.

Conduct a one-time potable water analysis in order to optimize cooling tower & evaporative condensers cycles. Receive additional credit for using 20% recycled nonpotable water.



ENERGY AND ATMOSPHERE

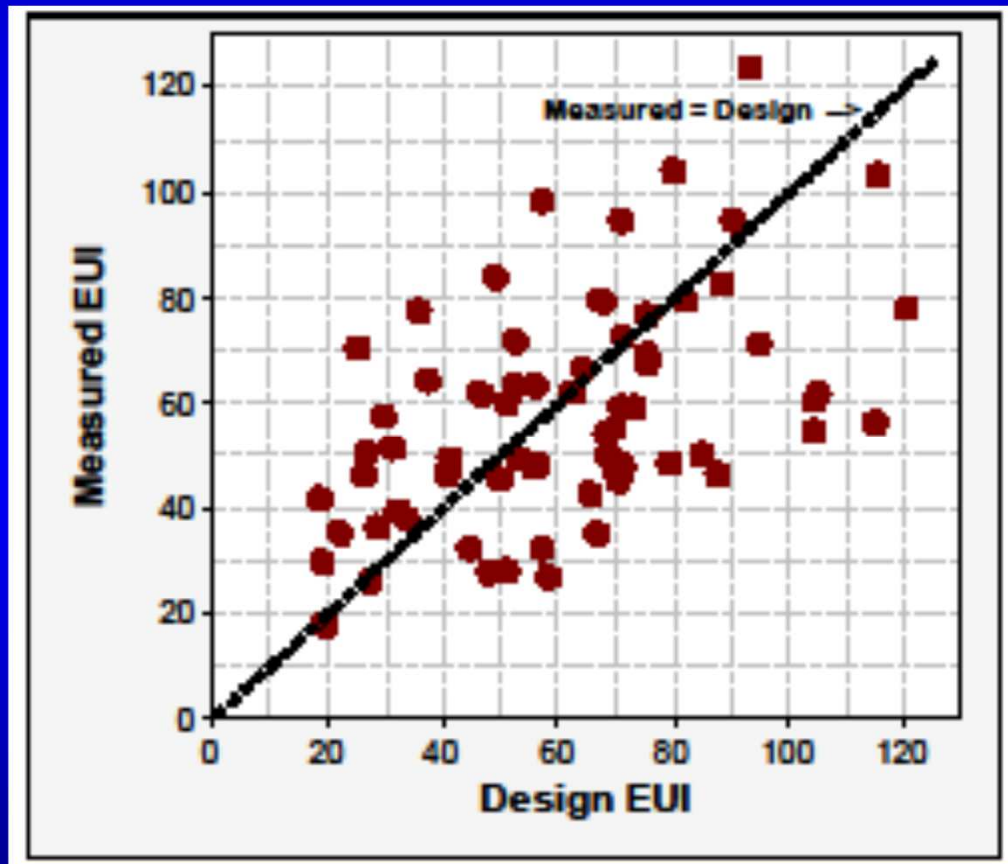
Tougher Energy Requirements



Increasing Energy Use Index levels of each ASHRAE 90.1 release directly corresponding to subsequent LEED versions. In v4 the energy prerequisite threshold is 5% better than ASHRAE 90.1-2010, which equates to about 20% difference in energy performance.

Energy Metering Prerequisite

(What gets measured gets managed)



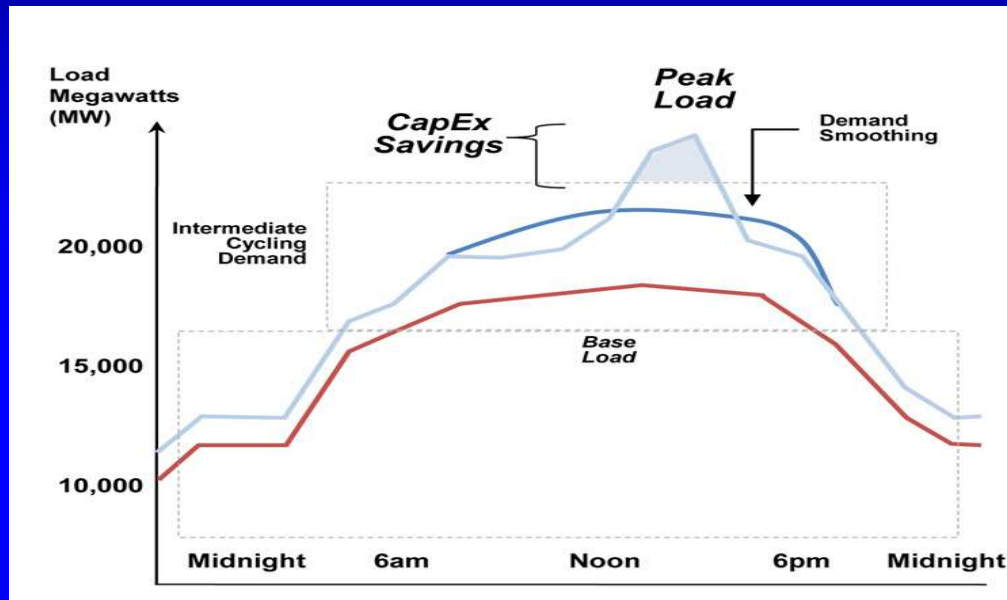
25% of LEED-rated buildings were found to perform below original design projections according to a New Buildings Institute study. V4 now has building-level energy metering as a prerequisite.

Demand Response

(Think beyond the walls)



Clothes dryer using a demand response switch to reduce peak demand



DR shifts load to smooth the peak at less cost to customer

Enroll in a 1-year DR contract w/qualified DR provider for 10% minimum of the project's estimated peak electricity demand

Green Power & Carbon Offsets



- Based on project's total energy
- Minimum of 5 year term
- Green power, REC's or carbon offset options
- Green-e energy or climate certified
- 50% or 100% threshold options



MATERIALS AND RESOURCES

Construction & Demolition Waste Management

MRp2: CDWM Planning- must identify 5 material streams

- Commingled, ABC, Metal, OCC & GWB

MRc5: CDWM- 4 streams minimum

- ADC is excluded
- WDF is accepted
- Commingled Waste counts as 1 stream unless specific materials are weighed for each tip
- Thresholds: 50% diverted/3 streams min = 1 point
75% diverted/4 streams min = 2 points

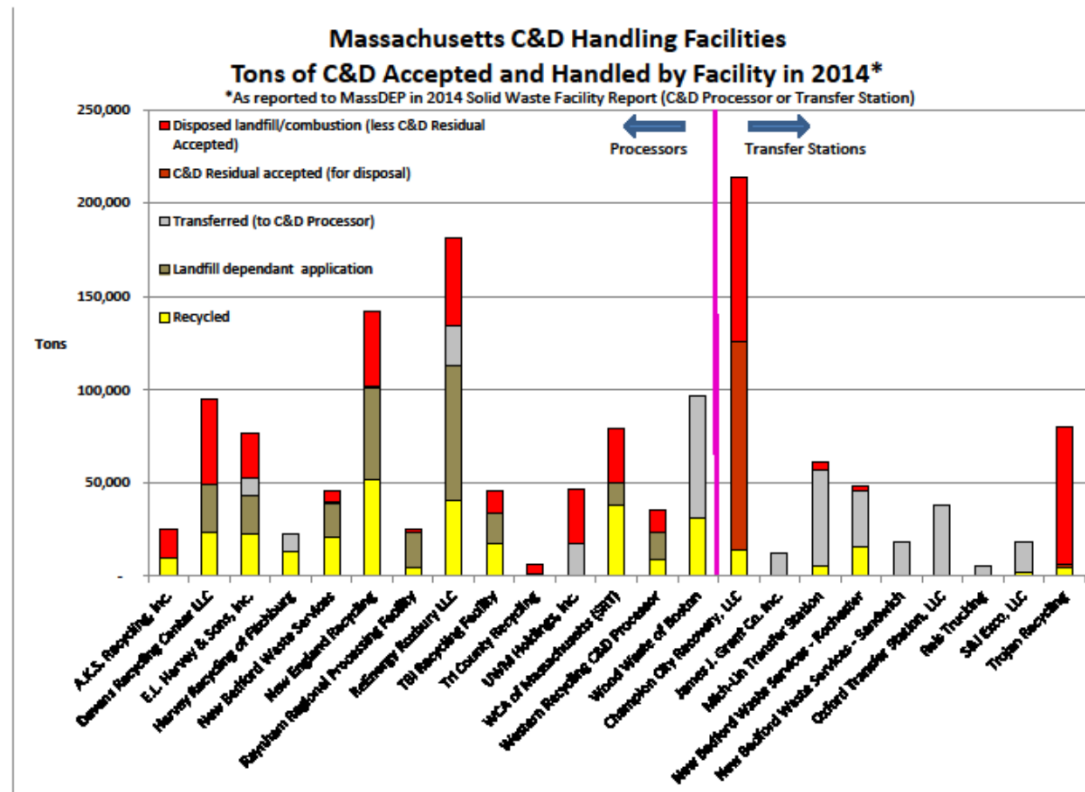
LEED v4 CDWM Requirements

- Exclude excavated soil, land-clearing debris from calculations. Include materials destined for alternative daily cover (ADC) in the calculations as waste (not diversion). Include wood waste converted to fuel (bio-fuel) in the calculations.
- Commingled waste diversion- must use the sorting facility's average yearly diversion rate which must be regulated by government authority (ie DEP Solid Waste Facility Report) and the system must be a closed system (ie transferring waste to other facilities does not count.)
- See handout for full description.

RATIONAL FOR ADC EXCLUSION

- To encourage supply of raw materials to secondary markets
- Keep waste materials in the production stream longer
- Create new markets for source separated materials

DEP 2015 FACILITIES SUMMARY



Who Decides What Documentation is Required?

The Owner decides.

Owner wants a LEED certified building,
the Design Team creates the specifications,
LEED provides the standards, the CA Team
collects the supporting documentation and
GBCI determines if the requirements are met.

How Annual Recycling Rate is Calculated

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention

2014 Solid Waste Facility Report - Construction & Demolition Processor or Transfer Station

Metal	87	Foodstock	Ward	Westport	MA
Residuals	1,989	Roadbase Material	Sunny Farms	Fosteria	OH
Shingles	209	Foodstock	Caney	Raynham	MA
Wood	3,276	Foodstock	New England Recycling	Taunton	MA
Wood	2,579	Foodstock	Plainfield Power	Plainfield	CJ
Wood	18,113	Foodstock	Tafisa	Lac Mergerie	QC
Wood	392	Foodstock	EL Harvey	Westborough	MA
Wood	194	Foodstock	Somass	Rochester	MA
Wood	930	Foodstock	Future Fuels	Tannum	MA
Wood	171	Foodstock	Bonalex	Quebec	Can.
Wood	1,839	Foodstock	Krugel	Quebec	Can.
Recycled/Used Total	50,129				

Annual Recycling Rate:
 $50,129 - 7,573 \text{ (ADC)} = 42,556 / 54,532 \text{ (total C\&D materials received)} = 78\%$

Average Tonnage of ADC:
 $7,573 / 54,532 = 14\%$

Average Tonnage of Landfill:
 $54,532 - 50,129 = 4,403$
 $4,403 / 54,532 = 8\%$

Verified Construction & Demolition Recycling Rates Pilot Credit

To achieve higher quality of construction and demolition waste diversion by encouraging a verification standard for recycling facilities that will accurately quantify waste data- 1 innovation point is granted. (see handout for requirements)

Recycling Certification Institute's Certification Of Real Rates (CORR) protocol meets the requirements of this Pilot Credit.

Building Product Disclosure & Optimization- EPD's

(LCA summary)

- Environmental Product Declaration Option 1:
Use 20 different products sourced from 5 different manufacturers that have a EPD disclosure.
- Multi-attribute Optimization Option 2:
Use third party certified products for 50% by cost of total value of materials in project. Products that meet 3 criteria (impacts below the industry average- found in EPD's) are valued at 100% & products sourced within 100 miles of project site are valued at 200%.

Multi-attribute Optimization

(proprietary vs transparency)

- Global warming potential (greenhouse gases)
- Depletion of the stratospheric ozone layer
- Acidification of land and water sources
- Eutrophication
- Formation of tropospheric ozone
- Depletion of nonrenewable energy resources

BPDO sample v4 form

LEED v4 BD+C: New Construction
MR Credit Building Product Disclosure and Optimization
Environmental Product Declarations

Rating Systems

Building Design and Construction

- ☒ New Construction
 - ☐ Core and Shell
 - ☐ Schools - New Construction
 - ☐ Retail - New Construction
 - ☐ Data Centers - New Construction
 - ☐ Warehouses and Distribution Centers - New Construction
 - ☐ Hospitality - New Construction
 - ☐ Healthcare
- ☐ The project is using IP units.
- ☐ The project is using GI units.

Interior Design and Construction

- ☐ Commercial Interiors
 - ☐ Retail - Commercial Interiors
 - ☐ Hospitality - Commercial Interiors

All Projects

Upload: BPDO Calculator
Provide the completed BPDO Calculator (found under the credit's "Resources" tab in the Credit Library) or equivalent documentation. Include all of the products contributing toward credit compliance.

Select one or more of the following:

- ☒ Option 1: Environmental product declaration (EPD) (1 point)
- ☒ Option 2: Multi-attribute optimization (1 point)

Option 1. Environmental Product Declaration

Provide the following value from the Summary tab of the BPDO Calculator:

Weighted number of products with EPD

☒ Products provided in the BPDO Calculator represent at least five different manufacturers.

Upload: EPD documentation
For each product, provide a summary of the product EPD, the full EPD document, or a reference to the website where the publicly-available EPD can be found. Highlight relevant sections as applicable.

Option 2. Multi-Attribute Optimization

Provide the following value from the Summary tab of the BPDO Calculator:

Sustainable criteria value as a percentage of total materials cost (%)

Upload: Multi-attribute optimization documentation
Provide documentation demonstrating that all products meet the credit criteria or a USGBC-approved program. If pursuing local or domestic criteria, provide documentation of product source location (extraction, manufacture, and purchase).

Weighted number of products must be at least 25 for 1 point and 40 for exemplary performance.

EPD summaries must include, at a minimum, verification of compliance with required standards as well as key summary data.

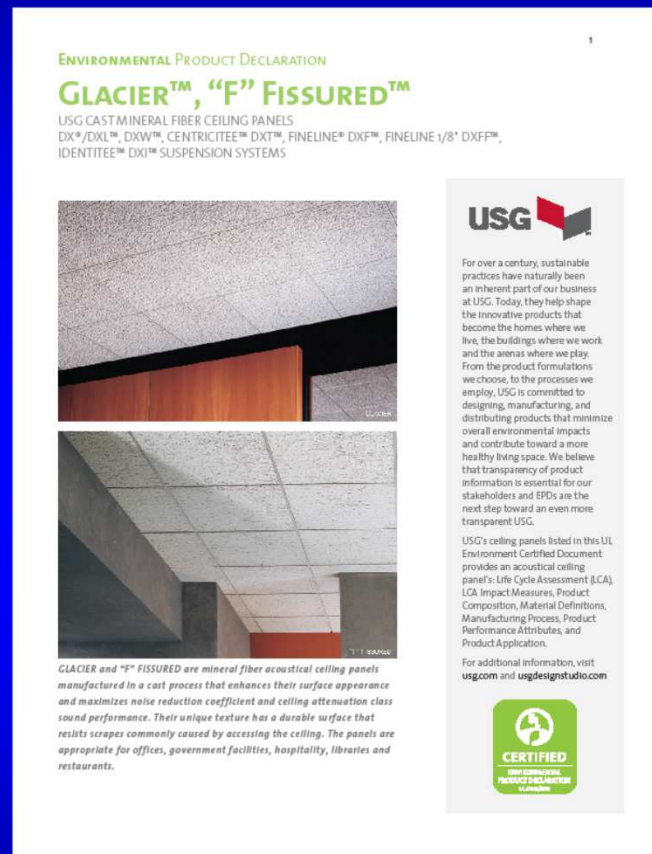
Sustainable criteria value must be at least 15% for 1 point and 75% for exemplary performance.

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Environmental Product Declaration Sample



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Document

Envirodec lists > 500 EDP's

Example Project



BPDO Calculator

Material Information

Material Description	CSI Div (optional)	Is the material structure or enclosure?	Description of Material	Manufacturer Name	Material Cost (\$)
Total value of sustainable materials (unweighted)					\$
Total materials cost					\$

Add Rows

Delete Rows



Building Product Disclosure & Opt- Sourcing of Raw Materials

- Raw Material Source & Extraction Reporting Option 1:
Use 20 different products sourced from 5 different manufacturers that provide corporate sustainability reporting (self-declared CSR.)
- Leadership Extraction Practices Option 2:
Use products that meet 1 responsible extraction criteria for 25% by cost of total value of materials in project. Products sourced within 100 miles of project site are valued at 200%.

Leadership Extraction Practices

- Extended producer responsibility- closed-loop recycling program to make more of same product
- Wood products- certified by FSC (Forest Stewardship Council)
- Bio-based materials- certified by SAN (Sustainable Agriculture Network)
- Materials reuse- includes salvaged, refurbished, or reused products
- Recycled content- sum of postconsumer recycled content plus one-half the preconsumer recycled content
- USGBC approved program

Building Product Disclosure & Opt- Material Ingredients

- Material Ingredient Reporting Option 1:
Use 20 different products sourced from 5 different manufacturers that meet one of the chemical inventory programs.
- Material Ingredient Optimization Option 2:
Use products that document their material ingredient optimization by an acceptable path for 25% by cost of total value of materials in project. Products sourced within 100 miles of project site are valued at 200%.

Chemical Inventory Programs

- Manufacturer Inventory- publicly available
- HPD (Health Product Declaration)
- C2C (Cradle to Cradle- v2 Basic Level)
- USGBC approved program

Health Product Declaration Sample

Name CertainTeed Ceilings Vinylrock		Product ID Multiple IDs (see Description below)		Classification	
Website		Manufacturer CertainTeed Ceilings Corp.		Contact Name Dennis Wilson	
Address Line 1 750 East Swedesford Road		Title Director, Product Stewardship &		Phone 610-341-7561	
Address Line 2 Valley Forge, PA 19482		Email dennis.wilson@saint-gobain.com		Health Product Declaration	
Description HPD covers the following CertainTeed Ceilings Products: Vinylrock					

Release Date	25-Sep-2013	<input checked="" type="checkbox"/> Self-declared		
Expiry Date	24-Sep-2016	<input type="checkbox"/> Second Party	Certifier	N/A
HPD URL		<input type="checkbox"/> Third Party	Certificate #	

SUMMARY
The content of this product was assessed for health hazard warnings as required using

Residuals Disclosure	Full Disclosure of Intentional Ingredients	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> Measured 100 ppm (ideal)	Full Disclosure of Known Hazards	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Measured 1000 ppm	Disclosure Notes	All ingredients are not listed by name to protect intellectual property.	
<input type="checkbox"/> Predicted by process chemistry			
<input type="checkbox"/> As per MSDS (1,000 & 10,000 ppm)			
<input type="checkbox"/> Not disclosed			
<input type="checkbox"/> Other			

Contents in Descending Order of Quantity (If the area below is full, refer to the following pages for additional listings)
Gypsum, Cellulose Fiber, PVC facer, Ethylene Vinyl Acetate, Starch.

Hazards		Highest concern GreenScreen score - Unspecified	
<input type="checkbox"/> PBT (Persistent and Bioaccumulative)	<input type="checkbox"/> Development	<input type="checkbox"/> Neurotoxicity	<input type="checkbox"/> Land toxicity
<input type="checkbox"/> Cancer	<input type="checkbox"/> Reproductive	<input type="checkbox"/> Mammal	<input type="checkbox"/> Physical hazard
<input type="checkbox"/> Gene mutation	<input type="checkbox"/> Endocrine	<input type="checkbox"/> Skin or Eye	<input type="checkbox"/> Global warming
<input type="checkbox"/> Respiratory	<input type="checkbox"/> Aquatic toxicity	<input type="checkbox"/> Ozone depletion	<input type="checkbox"/> Multiple Unknown

Total VOC Content	Material (g/l)	N/A	Does the product contain exempt VOCs?	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Regulatory (g/l)	NA	Are VOC-free tints available?	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Content Notes

Certifications and Compliance (If the area below is full, refer to the following pages for additional listings)
VOC Emissions

VOC Content

Health Product Declaration v1.0 (15 Dec 2012) - Summary - hpdcollaborative.org - Page 1 of 5



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BG lists >300

Material Ingredient Optimization Paths

- GreenScreen v1.2 Benchmark
- Cradle to Cradle Certified
- International Alternative Compliance
Path – REACH Optimization
- USGBC approved program



INDOOR ENVIRONMENTAL QUALITY

Low-Emitting Materials

- Product Category Calculations Option 1:
Meet the threshold level of compliance for emissions for the six product categories*.
- Budget Calculation Method Option 2:
If the above cannot be met for all products in a category, this option can be used. Credit is awarded based on % compliant of five assemblies*. This path may be doomed by its complexity.

CDPH Standard Method

- Building products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.1–2010

This test measures how much offgases from the product over time.

- In addition, wet-applied materials must be tested for both emissions & VOC content (what's actually in the can.)
VOC limits must meet SCAQMD Rule.
- FloorScore, GreenLabel Plus and GreenGuard all reference CDPH method (CA Section 01350 is shorthand for same.)

LEM Calculator

Option 2. Budget Calculation Method Summary

Note: All information on this tab is READ-ONLY. To edit, see previous tabs.

Refresh Assembly List

[illegible]

All BD+C and ID+C Rating Systems except Schools and Healthcare

Total percent compliant, without furniture (%)	25.00%
Total percent compliant, with furniture (%)	20.00%

BD+C: Schools and Healthcare

Total percent compliant, without furniture (%)	20.00%
Total percent compliant, with furniture (%)	16.67%



Low-emitting Materials 3rd Party Certifications & Labels

LEED v4 EQ Credit Low-Emitting Materials Third Party Certifications and Labels

The following table lists acceptable certifications for EQ Credit Low Emitting Materials. This list will be updated often to add programs as they become eligible. Note that the LEED v4 credit also requires reporting on TVOC levels. The programs deemed acceptable may already include this information—if they do not, project teams must request this additional information.

Certification or Program	Program Documents and Revision Dates	Testing Standard Referenced in Credit	Emissions and Content Requirements Eligibility			
			General Emissions Evaluation	VOC Content for Wet-Applied	Composite Wood Evaluation	Furniture Evaluation
SCS Indoor Advantage Gold	2/1/10 EC10.2 Standard Addendum	CDPH Standard Method v1.1	Yes			
SCS Indoor Advantage Gold	11/17/11	ANSI/BIFMA M7.1-2011				Yes
SCS Indoor Advantage		ANSI/BIFMA M7.1-2011				Yes (ANSI/BIFMA e3 7.6.1)
FloorScore	2/1/10 EC10.2 Standard Addendum	CDPH Standard Method v1.1	Yes hard surface flooring and flooring adhesives			

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Spatial Daylight Autonomy



sDA Option: most sophisticated daylight modeling, it is the percentage of the work plane that is above 300 lux (28 footcandles) at least 50% of occupied hours over a year.

Above requires glare simulations by way of annual sunlight exposure to avoid overglazing.

Illuminance Calculations Option: still allowed but are given less credit.

Indoor Light Measurements Option: still allowed but require more points & 2 measurements at different times of year.

LEED v4 Online Platform- Sample forms

U.S. Green Building Council Page 1 of 4

Please upgrade your browser. This site requires a newer version to work correctly. [Read more](#)

USGBC

[Smart filters](#)

LEED v4 Forms

VARIATIONS Many requirements for a credit are aligned across the BD+C and ID+C rating systems. When that is the case, there is one form for all aligned rating systems. If there are minor changes for certain adaptations (e.g. Healthcare), those are also included in the same form. These are called variations. Variations are listed below. You will see the list of rating systems and adaptations included in the form at the top of the form. These selections will not be visible in LEED Online, they will be selected based upon registration.

In some instances, prerequisite and related credit forms have been combined into one form, e.g. EA Prerequisite Minimum Energy Performance and EA Credit Optimize Energy Performance. Therefore, every credit does not necessarily have a unique form.

UNITS Projects must select either IP (inch-pound) or SI (International System of Units) units for their entire project. These selections will not be visible in LEED Online, they will be selected based upon registration. In the sample forms, both options are available. Not all forms include IP/SI unit variations, however, all forms have those selections visible in sample forms.

RECERTIFICATION LEED O+M forms have requirements for both project teams pursuing their first O+M certification and those that are coming back for recertification. These selections will not be visible in LEED Online, they will be selected based upon registration.

CREDIT RESOURCES If a credit has an associated calculator, it is listed below and can also be found under the Resources tab in the credit library.

☐ Match all results
☐ Match any results

Rating system is
LEED BD+C: New Construction

[Add another filter](#)

<http://www.usgbc.org/sampleforms> 2/5/2014



U.S. Green Building Council.url

LEED AP v4 form

LEED v4 BD+C: New Construction
IN Credit LEED Accredited Professional

Rating Systems

Building Design and Construction

☒ New Construction

☐ Core and Shell

☐ Schools - New Construction

☐ Retail - New Construction

☐ Data Centers - New Construction

☐ Warehouses and Distribution Centers - New Construction

☐ Hospitality - New Construction

☐ Healthcare

Interior Design and Construction

☐ Commercial Interiors

☐ Retail - Commercial Interiors

☐ Hospitality - Commercial Interiors

Operations and Maintenance

☐ Existing Buildings

☐ Schools - Existing Buildings

☐ Retail - Existing Buildings

☐ Data Centers - Existing Buildings

☐ Hospitality - Existing Buildings

☐ Warehouses and Distribution Centers - Existing Buildings

Certification Type

☐ Initial certification

☐ Recertification

☒ The project is using IP units.

☐ The project is using OI units.

All Projects

Name and credential of the LEED Accredited Professional with specialty who is a principal participant on the project team

Richard Moore, LEED AP BD+C

Describe the extent and depth of participation of the LEED Accredited Professional on the project.

Project Administrator for all DDC phases, guidance & review for DDC team credits and product submittal reviews.

The specialty of the LEED AP must match the rating system family of the project.

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LEED-NC v4 Checklist

LEED for New Construction and Major Renovations (v4)

POSSIBLE: 1		MATERIAL & RESOURCES		POSSIBLE: 13		
IP002	Integrative process	1	MR101	Storage and collection of recyclables		
LOCATION & TRANSPORTATION		POSSIBLE: 16	MR103	Construction and demolition waste Mgmt planning		
LT001	LEED for Neighborhood Development location	16	MR108	Building life-cycle impact reduction	5	
LT002	Sensitive land protection	1	MR112	Building product disclosure and optimization - environmental product declarations	2	
LT003	High priority site	2	MR114	Building product disclosure and optimization - sourcing of raw materials	2	
LT004	Surrounding density and diverse uses	5	MR115	Building product disclosure and optimization - material ingredients	2	
LT007	Access to quality transit	5	MR123	Construction and demolition waste Mgmt	2	
LT008	Bicycle facilities	1	INDOOR ENVIRONMENTAL QUALITY		POSSIBLE: 16	
LT110	Reduced parking footprint	1	EQ101	Minimum IAQ performance		
LT111	Green vehicles	1	EQ104	Environmental tobacco smoke control		
SUSTAINABLE SITES		POSSIBLE: 10	EQ110	Enhanced IAQ strategies	2	
SS101	Construction activity pollution prevention		EQ112	Low-emitting materials	3	
SS104	Site assessment	1	EQ113	Construction IAQ Mgmt plan	1	
SS105	Site development - protect or restore habitat	2	EQ114	IAQ assessment	2	
SS107	Open space	1	EQ115	Thermal comfort	1	
SS108	Rainwater Mgmt	3	EQ117	Interior lighting	2	
SS110	Heat island reduction	2	EQ121	Daylight	3	
SS112	Light pollution reduction	1	EQ123	Quality views	1	
WATER EFFICIENCY		POSSIBLE: 11	EQ124	Acoustic performance	1	
WE101	Outdoor water use reduction	2	REGIONAL PRIORITY		POSSIBLE: 4	
WE102	Indoor water use reduction	6	RP001	Regional priority	4	
WE104	Building-level water metering		TOTAL		110	
WE110	Cooling tower water use	2				
WE112	Water metering	1				
ENERGY & ATMOSPHERE		POSSIBLE: 33				
EA101	Fundamental commissioning and verification		40-49 Points	50-59 Points	60-79 Points	80+ Points
EA103	Optimize energy performance	18	CERTIFIED	SILVER	GOLD	PLATINUM
EA106	Building-level energy metering					
EA108	Fundamental refrigerant Mgmt					
EA110	Enhanced commissioning	6				
EA118	Advanced energy metering	1				
EA121	Demand response	2				
EA123	Renewable energy production	3				
EA126	Enhanced refrigerant Mgmt	1				
EA128	Green power and carbon offsets	2				

LEED v4 Useful Websites

LEED v4 User Guide:

www.usgbc.org/resources/leed-v4-user-guide

LEED v4 sample credit forms:

www.usgbc.org/sampleforms

LEED v4 new website platform:

<https://www.usgbc.org/leedonline.new>

Demand Response Partnership Program:

www.usgbc.org/leed/tools/pilot-credits/demand-response

Energy Performance of LEED for New Construction Buildings:

www.newbuildings.org/sites/default/files/Energy_Performance_of_LEED-NC_Buildings-Final_3-4-08b.pdf

Building Green: New Concepts in LEED v4 (CEU's available):

www.buildinggreen.com/v4course

Learning Objectives Reviewed

- 1 Underlying principles guiding v4
- 2 Performance connections- new integrative process & metering prerequisites
- 3 Product transparency & its ramifications on the building products industry
- 4 New concepts in IEQ

Thank You

**This concludes CSI Boston Chapter
program.**

QUESTIONS?

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required final slide
IT Department, 2/2/2007